BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	
and Their Impact Upon the	)	MM Docket No. 87-268
Existing Television Broadcast	)	
Service	)	

To: The Commission

SUPPLEMENT TO PETITION FOR RECONSIDERATION

Guy Gannett Communications, licensee of Television Station WTWC(TV), NTSC Channel 40, Tallahassee, Florida ("Guy Gannett"), by its attorneys, hereby supplements its Petition for Reconsideration (the "Petition") of the FCC's *Sixth Report and Order* in the above-captioned proceeding.[1/]

In its Petition, Guy Gannett urged the Commission to reconsider the allotment of DTV Channel 2 to WTWC(TV) based on the potential for serious interference and a reduction in WTWC(TV)'s service area. Guy Gannett noted that Channel 2 is far more prone to interference problems than any other NTSC channel and that this interference would be more severe with a digital broadcast. Given Channel 2's inherent unsuitability for DTV operations and that it may not be within the "core spectrum" following the implementation of DTV, Guy Gannett requested a new DTV channel assignment. Petition at 3-4.

1/ *Sixth Report and Order*, MM Docket No. 87-268, FCC 97-115 (released April 21, 1997 ("*Sixth R&O*"). This supplement is filed pursuant to the FCC's July 2, 1997 *Order* granting petitioners a 45-day period in which to supplement their petitions for reconsideration based on an analysis of their DTV allotment using OET Bulletin No. 69. *See Order*, MM Docket No. 87-268, DA-97-1377 (rel. July 2, 1997).

Further analysis of WTWC(TV)'s channel assignment based upon the technical criteria set forth in OET Bulletin No. 69 confirms Guy Gannett's conclusion that Channel 2 is not a viable DTV assignment for WTWC(TV). Included in Exhibit E hereto is the Engineering Statement of Robert Culver of Lohnes & Culver (the "Engineering Statement") which describes in greater detail the problems associated with Channel 2 operations. As indicated in the Engineering Statement, television transmissions on Channel 2 are inherently complicated by a number of interference problems. Stations operating on Channel 2 often experience interference caused by both (a) impulse noise from natural and man-made sources and (b) sporadic E-Layer ionospheric reflections, Engineering Statement at 1, and the interference is likely to increase with digital transmissions. In addition, this interference coupled with the low ERP assigned to WTWC(TV)[2/] and the poor performance generally of commercially available receive antennas[3/] makes it very unlikely that WTWC(TV) could achieve the service replication necessary for viable DTV operations. *See id.* at 2.

One of the Commission's primary goals in establishing the DTV allotments was to ensure that a television station's DTV assignment would replicate its existing service area. Assignment of DTV Channel 2 to WTWC(TV) will effectively preclude this station from achieving that goal. Given the numerous interference and service replication problems associated with Channel 2 operations and the fact that this channel may not be included in the

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2/ Increasing power is not an option for WTWC(TV) because of the additional interference that would be created.

3/ As described in the Engineering Statement, an antenna that could provide adequate reception of a Channel 2 signal is likely to be both costly and impractical for most consumers. *Id.* at 2-3.

"core spectrum," assignment of a different DTV channel to WTWC(TV) is warranted. Accordingly, Guy Gannett respectfully urges the Commission to assign a more suitable channel to WTWC(TV).

Respectfully submitted,

GUY GANNETT COMMUNICATIONS

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August 22, 1997

EXHIBIT E

Engineering Statement of Lohnes & Culver

EXHIBIT E
ENGINEERING STATEMENT RE:
FCC MM DOCKET 87-268 ATV
AND FCC OET BULLETIN NO. 69
GUY GANNETT COMMUNICATIONS
PORTLAND, MAINE

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Prepared by
Lohnes and Culver Washington, D.C.
August, 1997

EXHIBIT E
ENGINEERING STATEMENT RE:
FCC MM DOCKET 87-268 ATV
AND FCC OET BULLETIN NO. 69
GUY GANNETT COMMUNICATIONS
PORTLAND, MAINE

INTRODUCTION

This Engineering Statement is prepared on behalf of Guy Gannett Communications ("Guy Gannett"), with Headquarters in Portland, Maine and the licensee of several television stations, including station WTWC-TV in Tallahassee, Florida. WTWC-TV operates on UHF Channel 40 and was assigned Television Channel 2 for ATV operation in the Table of DTV Allotments in the FCC Sixth Report and Order in the above referenced matter.

In June 1997, Guy Gannett filed comments asking the Commission to reconsider the Channel 2 allotment because of the unique interference problems associated with television operations on this channel. Guy Gannett also noted that it needed to evaluate the Channel 2 assignment further using FCC OET Bulletin No. 69 when it became available. That Bulletin, detailing the FCC Technical Methodology for evaluating existing NTSC service and replicating it for DTV operation, is now available and specific comments are offered below.

CHANNEL 2 PROPAGATION - OET BULLETIN NO. 69 REQUIREMENTS

In its earlier comments Guy Gannett identified several technical problems associated with television transmission on Channel 2. Generally these include; 1) Increased background noise levels, particularly impulse noise from both natural (eg., lightning) and man-made (eg., power line and automotive ignition) sources, and 2) Sporadic E-Layer ionospheric reflections allowing long distance interfering signal propagation. These two problem areas are generally well known and acknowledged in

the industry and the content of OET 69 does nothing to alter the effect of these actual sources of interference.

Based on a review of OET 69, there are two additional reception problems likely to affect WTCW-TV as a DTV facility on Channel 2. They are: 1) Low transmitted ERP for principal city coverage, and 2) Poor performance of commercially available receiver antennas for Channel 2.

The minimum ERP adopted by the FCC, 1 kW, has been assigned to Channel 2 at WTWC. This power is 13 dB below the minimum UHF ERP of 50 kW and 30 dB below the maximum 1000 kW. For a transmitter site situated in the center of a modest size city, effective coverage can be expected even with low ERP in the immediate area around the transmitter, even behind relatively large buildings. However, in large city areas or from transmitter sites modestly removed from a city, coverage at modest distances from the transmitter, in or beyond the city, is problematical. Extra signal attenuation due to buildings and distance will combine to reduce the usable signal, but not locally generated interference, so that reliable coverage within the total replication area is in doubt. Clearly, lower VHF frequencies have propagation advantages in terms of distance but on Channel 2 this is more than offset by the combined effects of extra noise, interference and and building or obstruction attenuation. Increasing the ERP on Channel 2 is a possible solution but would not be feasible given the additional interference that would result.

Outdoor television receiving antennas have been in use and various stages of improvements since the first days of over-the-air broadcasting. Recent advances feature antenna electronics, materials and mounting and positioning (rotor) equipment. There has been, by comparison, virtually no change in the basic antenna design because of its basis in the physics of receiving antennas. Indeed, the advent of cable television and increasing local restrictions on outside antennas, not to mention cost, have worked to the disadvantage of antenna development by stifling demand. OET Bulletin 69 confirms the FCC planning factors chosen for DTV, including those for receiving antennas.

Historical and anecdotal, but generally well regarded comments, exist regarding the performance of outdoor receiving antennas on Channel 2. The generally acknowledged condition is that typical low cost consumer outdoor antennas offer little if any gain or directivity at Channel 2. In some cases the antenna has loss at Channel 2 relative to a dipole and the main receiving lobe may have a maxima at an orientation other than bore-sight. In other words, some samples are worse than useless. In an attempt to discover the best examples of outdoor antennas, this firm reviewed technical literature from Winegard Company, a well known and highly regarded manufacturer of top quality consumer receiving antennas. That information is quite revealing relative to the FCC planning factors in OET 69. The best of that manufacturer's antennas, the Chromstar 2000, Model CA-8100, lists a published Channel 2 gain of 7.6 dB with a front to back ratio of 19 dB, comfortably meeting the 4 dB and 10 dB planning factors. Unfortunately, that antenna has a list price of $234.75, weighs 15.5 pounds, measures 46 inches high by 110 inches wide by 164 inches long and has an unspecified but suspected high wind loading force due to its size and projected area. Its use requires a 17 foot diameter by 46 inch high turning disc volume and a suitably sized tower and rotor to orient it for proper reception. Conflicts with building covenants for installation of an antenna of this size may be considerable. The antennas from Winegard which appear to just meet the planning factor specifications, and could be classified as bulk installer antennas, are the DirecStar series. Model DS-7150 exceeds the factors with a gain of slightly over 4 dB and a F/B ratio in excess of 10 dB. The DS-7088 sacrifices some gain at approximately 3 dB but still achieves better than 10 dB F/B ratio. This latter antenna costs $64.20, weighs approximately 10 pounds, is 88 inches long by 110 inches wide by 26 inches high and has a turning circle diameter of 11 feet. This is still a large and moderately costly antenna by any measure. The former, slightly higher performance antenna, is still larger, heavier and abut twice the cost. In summary any low VHF antenna, especially on Channel 2, having the directivity and gain specified in the planning factors will be large and expensive and will require a tower and suitable rotor to be able to select reception of several off-the-air DTV signals.

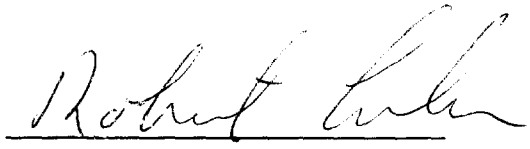
The planning factors require the use of quite elaborate home receiving antennas for the low VHF band, especially Channel 2. Assuming that such antennas are used,

the total cost of the antenna installation, antenna, tower, rotor and labor, will be several hundred dollars, possibly a large fraction of a DTV receiver cost. The equivalent antenna for high VHF or especially UHF will be a fraction of the size, cost and installation expense with reduced restrictive covenant impact. Consumers may well choose not to expend this level of effort to receive DTV and, instead, will settle for relatively inferior reception antennas compared to the planning factors. The result will be reduced reception areas and increased interference.

CONCLUSION

The use of Channel 2 for DTV operation should be reconsidered. Its long term use is clearly not contemplated because of its position outside of the DTV "core" frequencies. The potential for service less than predicted replication is highly likely considering the several impediments to reception. Installation of a rather expensive and difficult to build antenna for home reception for a frequency that will not be used in future years seems unlikely. Expansion of Channel 2 facilities to overcome reception problems, for example at a minimum ERP of 10 kW, would be more costly to build and operate, again for the same interim operation, and at the added expense of potentially more interference to other broadcasters during times of anomalous propagation.

Respectfully Submitted,

by 

Robert D. Culver, P.E.
Md. Reg. No. 19672

August, 1997